

WHAT IS CLAIMED IS:

1. A method of forming a semiconductor device, comprising:
2 simultaneously forming first electrodes adjacent each other on
3 a substrate;
4 forming a dielectric layer between the first electrodes; and
5 creating a second electrode between the first electrodes, the
6 second electrode contacting the dielectric layer between the first
7 electrodes to thereby form adjacent interdigitated electrodes.

2. The method as recited in Claim 1 further including
2 producing a first conductive layer over the substrate prior to
3 simultaneously forming and wherein simultaneously forming includes
4 simultaneously forming the first electrodes on the first conductive
5 layer, the conductive layer interconnecting the first electrodes.

3. The method as recited in Claim 2 wherein forming a
2 dielectric layer includes forming the dielectric layer over and
3 between the first electrodes and creating a second electrode
4 includes creating an electrode layer over and between the first
5 electrodes to form interconnected second electrodes over and
6 between the first electrodes.

4. The method as recited in Claim 1 wherein simultaneously
forming includes patterning a sacrificial layer on the substrate,
forming the first electrodes adjacent each other within the
patterned sacrificial layer and on the substrate, and removing the
sacrificial layer.

5. The method as recited in Claim 1 further including
producing a first conductive layer over the substrate prior to
simultaneously forming and wherein simultaneously forming includes
patterning a sacrificial layer on the substrate, forming the first
electrodes adjacent each other within the patterned sacrificial
layer and on the substrate, and removing the sacrificial layer.

6. The method as recited in Claim 1 further including
forming a first barrier layer between the first electrodes prior to
forming the dielectric layer between the first electrodes and
forming a second barrier layer between the first electrodes prior
to creating a second electrode between the first electrodes, the
second electrode contacting the barrier layer between the first
electrodes.

7. The method as recited in Claim 1 wherein simultaneously
forming includes simultaneously forming first electrodes having an

object ratio
substrate

[illegible]

8. A method of manufacturing an integrated circuit,
comprising:

forming active or passive devices over a substrate;

creating an interdigitated capacitor over the substrate,

including:

placing a first conductive layer over the substrate,

simultaneously forming first electrodes adjacent each other on the first conductive layer, the conductive layer interconnecting the first electrodes,

forming a dielectric layer over and between the first electrodes and on the first conductive layer, and

depositing an electrode layer over and between the first electrodes to form interconnected second electrodes over and between the first electrodes; and

interconnecting the active or passive devices and the interdigitated capacitor to form an operative integrated circuit.

9. The method as recited in Claim 8 wherein simultaneously forming includes patterning a sacrificial layer on the substrate, forming the first electrodes adjacent each other within the patterned sacrificial layer and on the substrate, and removing the sacrificial layer.

10. The method as recited in Claim 8 further including
forming a first barrier layer between the first electrodes prior to
forming the dielectric layer over and between the first electrodes
and on the first conductive layer and forming a second barrier
layer between the first electrodes prior to depositing an electrode
layer over and between the first electrodes to form interconnected
second electrodes over and between the first electrodes, the
electrode layer contacting the second barrier layer.

11. The method as recited in Claim 8 wherein simultaneously
forming includes simultaneously forming first electrodes having an
aspect ratio ranging from about 7:1 to 10:1 adjacent each other on
a substrate.

12. The method as recited in Claim 8 wherein forming a
dielectric layer includes forming a dielectric layer having a high
dielectric constant.

13. The method as recited in Claim 8 wherein creating an
interdigitated capacitor includes creating an interdigitated
capacitor wherein the first electrodes and the first conductive
layer are comprised of substantially the same material.

14. The method as recited in Claim 8 wherein creating an
interdigitated capacitor includes creating an interdigitated
capacitor wherein the first electrodes, the first conductive layer,
and the electrode layer are comprised of substantially the same
material.

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Sub. A2
15. An interdigitated capacitor, comprising:

2 first electrodes located on and interconnected by a first
3 conductive layer;

4 a dielectric layer located over and between the first
5 electrodes and on the first conductive layer; and

6 an electrode layer located on the dielectric layer and over
7 and between the first electrodes to form interconnected second
8 electrodes over and between the first electrodes.

Sub. C1
16. The interdigitated capacitor as recited in Claim 15
further comprising a first barrier layer located between the first
electrodes and the dielectric layer, and a second barrier layer
located between the dielectric layer and the electrode layer.

17. The interdigitated capacitor as recited in Claim 15
wherein the first electrodes have an aspect ratio ranging from
about 7:1 to 10:1.

Sub. A2
18. The interdigitated capacitor as recited in Claim 15
wherein the dielectric layer is comprised of a material having a
high dielectric constant.

Sub. C1
19. The interdigitated capacitor as recited in Claim 15

wherein the first electrodes and the first conductive layer are comprised of substantially the same material.

20. The interdigitated capacitor as recited in Claim 15 wherein the first electrodes, the first conductive layer, and the electrode layer are comprised of substantially the same material.

[illegible]